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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,207	09/13/2006	Masahiro Watanabe	843.45747X00	5403
20457 7590 07/11/2008 ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873				
EXAMINER				
PHAM, HOA Q				
ART UNIT		PAPER NUMBER		
2886				
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07/11/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/562,207

**Applicant(s)**

WATANABE ET AL.

**Examiner**

Hoa Q. Pham

**Art Unit**

2886

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/DE)  
Paper No(s)/Mail Date 12/23/05 & 3/20/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

2. The information disclosure statements(IDS) submitted on 12/23/05 and 3/20/08 have been considered. A copy of form PTO-1449 is attached.

***Drawings***

3. Drawings filed on 5/23/06 are accepted.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 14-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
  - a. Claim 14 depends on itself.
  - b. Claim 15 depends on claim 14, therefore, inherit the deficiency of claim 14.

***Claim Rejections - 35 USC § 102***

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6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 5-9, 11-12 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Motosugi (5,548,405).

Regarding claims 1 and 9, Motosugi discloses a three-dimensional shape measuring apparatus comprising: a plurality of measurement heads (10, 12, LS, LU) for measuring a three-dimensional shape of a sample (9), wherein three-dimensional shapes at a plurality of points on the sample are simultaneously measured using the plurality of measurement heads (figures 1, 2A-2C).

Regarding claims 2-3, see stages (2, 3, 4, 11 and 13) in figure 1.

Regarding claims 5 and 16, Motosugi teaches the use of laser displacement gage (column 3, line 38-51) or different kinds of measurement system (i.e., contact probe, optical probe, image device) (column 1, lines 13-42).

Regarding claims 6-7, see column 2, lines 48-55 for measuring the position of an object to be measured.

Regarding claim 8, Motosugi teaches the use of a laser displacement gage (column 2, lines 39-47).

Regarding claims 11 and 12, column 4, line 37 teaches the use of a computer; thus, it is inherent that a "display" is disclosed.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4, 10 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motosugi.

Regarding claim 4, Motosugi teaches that the sample is rotated by a rotation stage for rotating the sample (column 1, lines 60-67) and does not explicitly teach that the measurement head has a rotation mechanism, and an angle of the measurement head is adjusted by the rotation mechanism in accordance with rotation of the sample. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to rotate the measurement head instead of rotating the sample because they are function in the same manner.

10. Claims 10 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motosugi in view of Toyoshima et al (US 2003/0090651 A1).

Motosugi does not explicitly teach that the sample to be measured is a semiconductor wafer; however, such a feature is known in the art as taught by Toyoshima et al .Toyoshima et al discloses a three dimensional micropattern profile measuring system and method in which the wafer (100) is measured on the basis of optical measuring device (i.e., light source 103, detector 101) (figures 1 and 5). It would

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have been obvious to one having ordinary skill in the art at the time the invention was made to use the basic device of Motosugi for measuring three-dimensional shape of a pattern on the wafer as taught by Toyoshima et al because it does not matter what types of sample, the device would operate in the same manner.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Usami et al (4,982,438) and Sasazawa et al (2003/0223087 A1) disclose an apparatus and method for measuring three dimensional shape of a object.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (571) 272-2426. The examiner can normally be reached on Monday through Friday, 8:00AM TO 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on (571) 272-2287. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hoa Q. Pham/  
Primary Examiner, Art Unit 2886

HP  
July 6, 2008